



Ø BEAT



COLO. SPRINGS,
COLORADO

October 1980

Knock off all that noise!!

Here is a novel noise limiter circuit to add between the speaker output terminals of your receiver and the speaker. Also presented are curves of the voltage across a number 47 lamp versus the current through it and volts versus bulb resistance. This data is presented to aid the builder in choosing alternate value resistors for different power levels of limiting.

The circuit works simply as a balanced bridge when the power level is such that the bulb resistance is 47 ohms. When a noise pulse occurs and the bridge balances no output from the speaker is heard. The original circuit called for two equal resistors of 47 ohms but I added a pot to one side so the bridge could be balanced completely.

The adjustment is simple: set the receiver audio level with the calibrator signal tuned in so the bulbs show a dull glow then set the pot for minimum output.

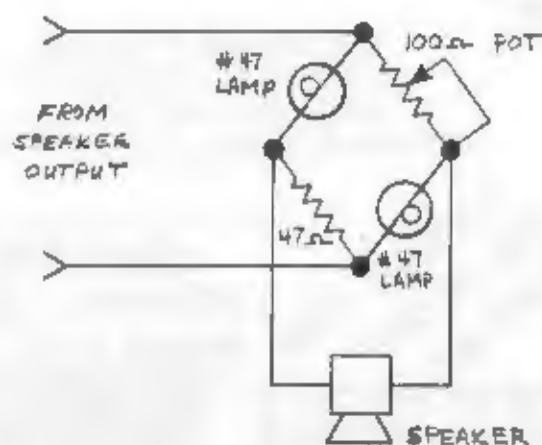
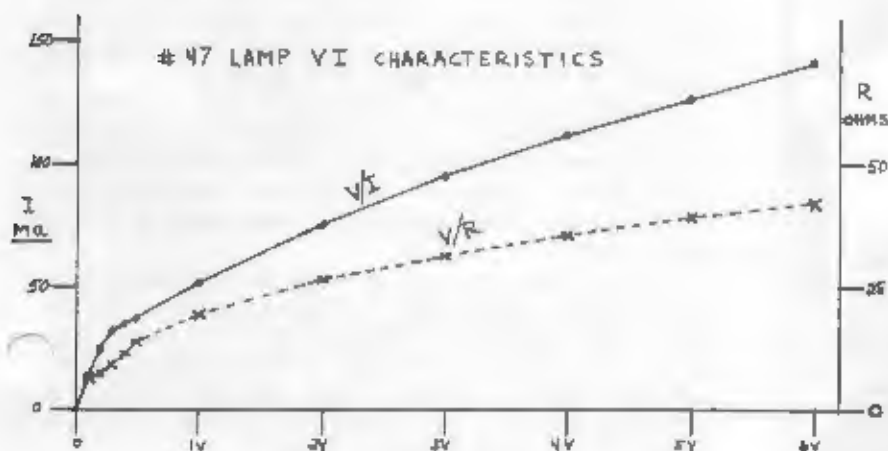
The circuit really does work. It does suffer from response time (the bulbs don't heat up instantaneously) but a little experience with the unit lets the operator set the level for best effect.

I would like to hear from anyone who builds the circuit concerning the effects on various noise sources. My location is so quiet I wasn't able to give it a good test, darn it (Hi Hi).

Who knows, maybe it would be useful on the TV set to eliminate Howard Cosell on Monday Night Football.

The circuit was passed on to me by Hal WBØRER. Hal says the circuit appeared in the Air Force MARS newsletter and is an improvement over a similar unit using a single lamp that appeared in the ARRL Handbook.

Ray AAØL



NOISE LIMITER CIRCUIT

P.P.R.A.A. DIRECTORS

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(* Two-year board terms began November 1979)

ZERO BEAT is published monthly in the interest of the members of the Pikes Peak Radio Amateur Association, Colorado Springs, CO. Permission is given to reprint articles or excerpts provided credit is given. Deadline for submission of articles to be published is the third week of the month. Classified accepted anytime.

The Pikes Peak Radio Amateur Association meets on the second Wednesday of every month at Sabin Jr. High School, 3605 N. Carefree Circle at 7:30 p.m. and all amateurs and interested persons are cordially invited.

Editor: Jim Colvin NØAVY, 4610 Topaz, Colorado Springs, Colorado, 80918 598-7704

SEPTEMBER MEETING MINUTES

The September Meeting was called to order to President Don Lohse, KBØKQ, at 7:30 P.M. on September 10, 1980 at Sabin Junior High School. There were 47 members and guests present. Those present introduced themselves and told of their radio interests.

Following the introductions Darryl Bodenhamer and Dave Acree, WDØMBZ, gave a most interesting presentation on the Over the Horizon Backscatter Radar System presently being tested in Maine. Thank you for a very informative program.

After the break, following the program, the meeting resumed with the approval of the August meeting minutes as printed in Ø Beat.

David Riese, WBØSDW, gave the treasurer's report. As of August 17 the balance was \$503.07 with \$77.55 in SERV-

COM. Since that date more bills have been paid and the SERV-COM account has been depleted.

Novice classes will begin September 23, Tuesday, at North Junior High School, 612 E. Yampa and will continue for six weeks meeting on Tuesday and Thursday evenings at 7:30 P.M. Tuesday will be theory taught by Don, KBØKQ, and Thursday will be code taught by Jim, NØAVY. Upgrade classes will start after the novice class ends. Another novice class will be held in the spring.

Ray Uberecken, AAØL, announced that the VHF Contest is this weekend, Sept. 12, 13 & 14. He will be operating from his ham shack at 9635 Thoroughbred in Black Forest and welcomes all who are interested to come and participate. If you can not participate at Ray's shack please give those at the ham shack a contact.

Smitty, WBØLTV, reported on his recent VHF DX Expedition with Dave, WBØRRU, to New Mexico. Made contacts in Colorado Springs, Cheyenne, Wyo., and Texas. They made between 20 and 30 contacts.

It was announced that Dr. Tom Purdon, ABØA, was the doctor for a National Geographic Society Expedition to the Marshall Islands. He will be on 14.232 at 11:00 PM Colorado Springs time.

Bud, WBØTIB, announced the Pikes Peak FM Association picnic to be held Saturday, September 27, at Bud's home in Black Forest. Come any time around noon, bring a covered dish and \$1 to cover the cost of soft drinks. If you need assistance finding Bud's he will talk you in on 37/97.

The desire for another transmitter hunt was discussed. Smitty, WBØLTV; Doug, WBØMHP; and Ralph KAØGJO will be organizing the hunt. If you are interested or desire information contact one of these people on 52 or phone.

December meeting will be homebrew night. A contest is being considered with possibly 3 categories such as operating aides, stations, or unlimited. Remember the October meeting is election night. Come vote for your next years officers and board members. Give suggestions for candidates to Don or other officers.

The Christmas party was discussed at great lengths with many suggestions being made for locations and date. The following were suggested: a catered party at St. Mary's High School, The Valley Hi Golf Club, Iron Springs Chateau, Grai. and Grape, The Castaways, Flying W, and Black Angus. The first choice for a date was December 13, December 12 second choice and 3rd and 4th December 5 and 6.



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MICROPHONES



MICROCIRCUIT DESIGNERS: THE CIRCUIT SHORTENS

The size of the pool of specialized engineers responsible for the continuing miniaturization of the electronic circuitry is ironically showing signs of dwindling.

The likelihood of further innovation and enhanced productivity in the field of very large-scale integrated (VLSI) circuitry rides on the skills of a small group of these specialists — only about 2,120 in 1978 — as does the future of the applications of VLSI technology. Only about 150 of each year's new graduates in VLSI design and process areas remain in the field for more than 3 years, writes I.R. Saddler, manager of the very high-scale integrated circuitry (VHSIC) at Motorola, Inc. in the Military Electronic/Countermeasures magazine. Thus, the continuing graduation of key personnel from engineering schools is needed to insure adequate creative resources.

Mr. Saddler warns that curtailment of growth in VLSI technology will be due to "a limitation in brain power" and not to "shortages, real or imagined," in materials. So serious are the implications for this field that he questions if the development of U.S. semi-conductor technology can continue at its present rate for long.

The semi-conductor industry hasn't felt the worker crunch yet. It has grown at a rate of 20 to 30 percent annually for the past few years and now accounts for about 5.3 percent of the U.S. gross national product, says Mr. Saddler. But those days may be numbered.

There may be lean times soon for industry and military staffers trying to maintain the present size of the work force. This national problem is developing despite the fact that the fraction of 18-year-olds entering college has increased steadily since the mid-1950's, and no change in this trend is imminent.

On the bright side are several harbingers of hope:

- "Most of the major semiconductor houses have some form of engineer training program," notes Mr. Saddler.
- Learning to produce semiconductor devices "needn't be done on the latest equipment" he observes, promising some capital relief for financially limited academic and industrial training programs.

The most efficient use of a VLSI silicon chip is produced by hand layout — not computer design. But the increasing complexity of these chips is leading to the day when "it will be impossible in any reasonable time to do a layout" says Mr. Saddler.

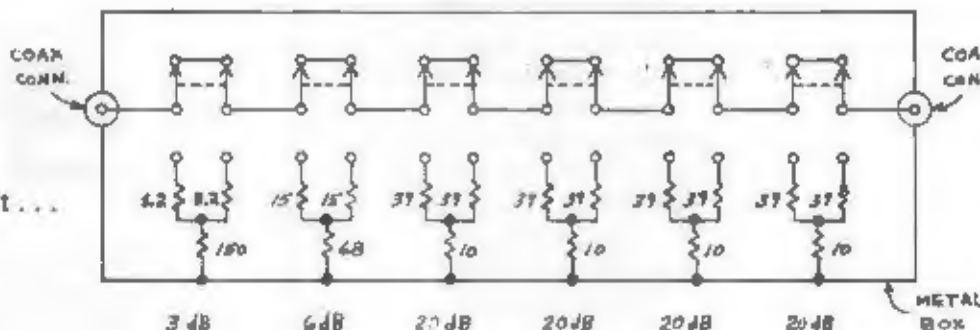
The stakes riding high on these lowly chips are high indeed. Quips John D. Vance, publisher of Military Electronics/Countermeasures: "What stands on spindly legs, crouches in flat shells, and holds the key to U.S. defense technology supremacy? — — — The proverbial semiconductor chip!"

Technology Review — June 1980

Frank WBØPAJ

For those of you who may have missed it . . .
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Courtesy Ray AAØL



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IT'S HUNTING SEASON AGAIN (But No Guns Please!)

Transmitter hunt time again. Get out your direction finding gear, check it out and join the fun. The hunt will be basically the same as it was this spring except it will be on Sunday instead of Saturday.

Because "ole Sol" goes to bed earlier these days, we will start at 1 p.m. (1300) from Radio Shack parking lot on T-Gap just west of T-Gap and Academy (sometimes known as the Ranch Shopping Center). The date is October 19th.

For those of you wishing to go and have no equipment, come to the October club meeting and line up an instructor/partner who has an extra seat.

For those of you who have never done it before and have some equipment, give it a try, you'll enjoy it!

Some of the ground rules to remember are:

- *Lowest odometer reading is the winner.
- *The hunter must not travel any route that is impossible to a regular 2 wheel drive family car.
- *The huntee must not hide somewhere requiring 4 wheel drive, tank, or helicopter to get to.
- *The huntee can be anywhere in El Paso County on Public Property excluding Manitou Springs.
- *Tie breaker will be earliest arrival.

Again, Sunday, October 19, at 1 p.m. the hunt starts. Be at Radio Shack by 12:30 to set up and give starting mileages to the fox.

See you there!

Doug WBØMHP

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FOR SALE: Collins 30 L-1 Amplifier, \$300 Leon WA6SDD, 574-5535, 3615 Regis St.

FOR SALE: 50 Ft. Freestanding tower. Unassembled and ready to haul, \$275. Warren WBØSJR 633-6161 or 635-7469.

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SEPTEMBER BOARD MINUTES

The board meeting was held September 8, 1980 at the home of Dave Vierling, NØDV, at 2511 N. Tejon at 7:30

Those present were Don, KBØKQ; Dave, NØDV; Lorna, WDØBTF; Dick, WBØPNX; Ray, AAØL; Frank, WBØPAJ; Dave, WBØSDW; and Charleen, WBØYOB.

The Woodland Park Enduro is all set up and ready to go on September 21, 1980. All workers have been contacted and 200 entries have already been received with more coming in every day.

The Pikes Peak FM Association has asked the club members to check in on the Sunday Net on 37/97 at 7:30 P.M. with news of events and club sponsored activities.

Mike Stansberry, KØTER, has volunteered to serve on the public service committee with Warren, WBØSJR, and Bob, KØDJ.

Novice classes will start at North Junior High on September 23 at 7:30 P.M. The theory classes will be taught by Don Lohse, KBØKQ, on Tuesday nights, and Jim Colvin, NØAVY, will be teaching code on Thursday nights. Novice classes will run for six weeks followed by 14 weeks of upgrade classes. Another novice class will be started after the upgrade classes.

Frank, WBØPAJ, reported that the club picnic was held at Oak Stockton's, KØROL, cabin. As usual Oak was the fine congenial host to those who attended.

VHF Contest will be held September 12, 13, & 14 and those interested are invited to Ray, AAØL's shack to participate.



ELECTION

FOR SALE: Hustler HF Mobile Ant. MO2 with 10, 15, 20, 40 meter resonators, MFJ Deluxe Versa Tuner II Model 949, Watt Meter — SWR Meter, Dummy Load, 2 coax connectors, Balun — Radom Wire, Best Offer, Frank, NØBOV, 472-6150.

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Dick Kohlhaas, W5UDM



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de the President

It's been my pleasure . . . to get to know many of you a lot better, and to work with you on all those things we do together to maintain our reputation as an active, committed group of hams.

I hope that some of the things that happened in the past year have been to your liking, because those of us who have been on the board have really tried hard to make this year's activities a success, and with the help of many people who gave much of their time and effort, it all came off well.

There were many people who stuck their hand up to get involved this year, and to each one of them, a personal thanks from me. One of the main problems of the president of this club is getting enough people to do all the things that our various projects get us into. It is really kind of sad that this has to be a problem, but it is. Many a time we went right down to the wire wondering if we could get it all done. It did get done, thanks to those people who care.

This month is the election — a new group of people to be responsible for the course of the club in the coming year. I would ask you to give them the same consideration that you gave to this year's officers and board. It is certainly appreciated, believe me.

73's
Don KBØKQ

FOR SALE OR TRADE: HyGain 5BDQ Trap Dipole cut for general phone portions — all hardware & manual. Please contact Don WDØBSZ at work 8 AM—4 PM phone 471-8522, home 1--683-2883. El Paso County Phone Co.

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MEETING NOTICE

The October meeting of the Pikes Peak Radio Amateur Association will be held on October 8 at 7:30 p.m. at Sabin Jr. High. Election of club officers and directors will take place. All members are urged to attend and take part in the elections.

Notice to Advertisers:

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ZERO BEAT NEEDS YOUR ARTICLES!!

Please submit any and all pieces on any subject that would be of interest to the readers of Zero Beat. This paper is only as good as what's in it. **CONTRIBUTE!!**



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